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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

EDWARDS, PATRICK L

ART UNIT PAPER NUMBER

2621

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/657,272	Applicant(s) MATAMA, TORU	
	Examiner Patrick L Edwards	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06-14-2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-17,19-22 and 24-38 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-17,19-22 and 24-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The response received on June 16, 2004 has been placed in the file and was considered by the examiner. An action on the merits follows.

Response to Arguments

2. The applicant's arguments, filed on June 16, 2004, have been fully considered. A response to these arguments is provided below.

35 USC 112, Second Paragraph Rejections

Summary of Argument: Claims 1-38 stand as being rejected under 35 USC § 112 second paragraph.

Applicant argues that this rejection has been overcome by the present amendment.

Examiner's Response: The examiner disagrees. Both the non-final rejection mailed on February 12, 2004 and the non-final rejection mailed on July 15, 2003 expressly requested a complete review of the claims in order to eliminate the existing occurrences of grammatical errors, awkwardly worded sentences, etc., which seem to be caused by errors in the translation. In these two prior actions, the examiner listed a few specific examples of the types of problems associated with the claims, but also indicated that the examples were given as an aid to the applicant and were not meant to be treated as an exhaustive list. In both instances the applicant has responded by amending only the specific examples listed by the examiner. Neither of the responses provided "a complete review and revision of the claims to adjust for all of the errors" as requested in the previous action.

The claims still contain problems that render them indefinite. The problems are grammatical in nature and seem to be caused by errors in the translation. The examiner requests a complete review and revision of the claims to adjust for these errors.

Prior Art Rejections

Summary of Argument: The applicant argues that the limitations of the newly amended claims are not taught by the references cited in the previous action.

Examiner's Response: The applicant's arguments have been fully considered but are moot in view of the new grounds of rejection necessitated by amendment.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1, 3-6, 8-17, 19-22, 24-38, 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There are a number of problems with the claims that render them indefinite. These problems are mostly grammatical in nature and appear to be caused by errors in the translation. A couple examples of these errors are presented below. These examples are given in order to illustrate to the applicant some of the ways that the claim language is confusing. They are not an exhaustive list of all the problems with the claims. The examiner requests a complete review and revision of the claims to adjust for all of the errors in the claims.

Several of the claims recite the limitation of 'reading a specified detecting light by scanning a(n) visible/invisible light'. This phrase appears to be redundant. Are scanning a document and reading a document not the same thing? It appears as if this redundancy adds unnecessary confusion to the claims.

With regard to claims 1 and 17, the first paragraph in the body of the claim recites that "the one-dimensional reading is continued during the scanning". This phrase is unclear as currently recited in the claim. What does it mean that the one-dimensional reading is continued? When did the one-dimensional reading stop? For examination purposes, this paragraph will be interpreted as method of reading an image in a main scanning direction (i.e. from the top of the page to the bottom of the page) and a sub-scanning direction (i.e. reading an image from left to right at a given vertical position of the image). The 'continuation' limitation of this claim will be interpreted to mean that the scanning in the sub-scanning direction takes place for every line that is scanned in the main scanning direction (i.e. it is 'continued').

The second paragraph in the body of the claim refers to an "identical reading position". This limitation is unclear as currently recited. The claim recites two reading directions, one of which is parallel to the other. Is this "identical reading position" located in the first scanning direction or the second scanning direction? The confusion with respect to the continuation of the reading of data as mentioned in the above paragraph arises in the second paragraph as well. For examination purposes this paragraph will be interpreted as a method for determining portions of an image where the light quantity data changes at an identical reading position in either of the aforesaid reading directions. This amounts to the detection of vertical or horizontal streaks in an image.

With regard to claims 4 and 20, the metes and bounds of the term "move relatively" are not clear as recited in the claim. For examination purposes this will be interpreted to mean that one of the image recording medium or the line sensor moves in relation to the other.

With regard to claims 5 and 21, the phrase "wherein the scanning by transferring a mirror reflecting the specified detecting light in the optical path", makes no grammatical sense. This sentence could be corrected by adding the words "is performed" after the word "scanning".

With regard to claims 36-38, it appears as if these claims are redundant. How is scanning the detecting light onto the image-bearing portion different from irradiating an image bearing portion?

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To reiterate, the above examples are only given in order to illustrate some of the problems with the claims. A proper response to this office action will include a complete review of the claims for any and all deficiencies, not merely a correction of the problems mentioned above.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3-6, 8, 10-11, 17, 19-22, 24, 26-27 and 36-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Stevenson et al. (USPN 6,393,161).

With regard to claim 1, the first paragraph in the body of the claim recites “reading a specified detecting light by scanning the detecting light in a first direction using an optical path of the visible light, wherein the specified detecting light is one-dimensionally read in a second direction which is perpendicular to the first direction of the scanning and the one dimensional reading is continued during scanning”. These limitations amount to nothing more than a scanner which scans in a main scanning direction (i.e. up and down the page) and a sub-scanning direction (i.e. from left to right across the image). The scanner moves vertically down the page line-by-line and each line is read horizontally (i.e. the one-dimensional reading is continued for each line). These steps are typically performed in any type of image scanning operation, such as copier, facsimile, etc. For instance, Stevenson discloses scanning documents by passing a narrow slit of light in a process direction P over an image to be scanned. This process direction P is analogous to the claimed “first direction”. Stevenson discloses that this slit of light (or scan line) is read by a photosensitive chip (column 3 lines 30-46). Inherently, the reading of an individual scan line is done in a direction perpendicular to the main scanning direction. This is the case in the Stevenson reference, where the data of each scan line is read by a linear photosensitive chip (col. 3 lines 30-46). We could also say that the linear photosensitive chip discloses in Stevenson reads the data “one-dimensionally”, since it reads a row of pixels (or a scan line) one pixel at a time across the image (col. 3 lines 30-46).

Stevenson further discloses determining from the read detecting light whether light quantity of the one-dimensionally read detecting light contains a portion where the light quantity data changes identically at an identical reading position (col. 4 lines 6-22). Stevenson discloses determining whether “a particular location” along a scan

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line always outputs black (or an equivalent set of colors) (see Stevenson col. 4 lines 6-23). This 'particular location along a scan line is analogous to the claimed "identical reading position". Stevenson discloses detecting pixels of a same color at this particular location. Detecting pixels of the same color is analogous to the detection of identical light quantity data.

Stevenson discloses that the above determination is performed for the purpose of detecting either dirt (or an abrasion) on the surface of the window 12 (col. 3 lines 47-55 in conjunction with Figure 1). The window 12 disclosed in Stevenson qualifies as an "optical element" as recited in the claim.

With regard to claim 3, Stevenson discloses that the one-dimensional reading is performed by photosensitive chip 16 (col. 3 lines 30-46). This photosensitive chip qualifies as the claimed "line sensor" in that it defines a single linear array of photosensors.

With regard to claim 4, Stevenson discloses that the scanning is performed by allowing the image recording medium and the line sensor to move relatively by transferring the image recording medium in relation to the line sensor (col. 3 lines 6-15, 30-46). Stevenson discloses transferring a sheet of paper in relation to the photosensitive chip (see the above cited passage in conjunction with Figure 1). As was discussed above, the photosensitive chip disclosed in Stevenson is a line sensor. It follows that a sheet of paper qualifies as an image recording medium.

With regard to claim 5, Stevenson discloses that scanning is performed by transferring a mirror reflecting the specified detecting light in the optical path (col. 3 lines 16-21).

With regard to claim 6, Stevenson discloses the step of issuing an alarm when a streak is detected (col. 5 lines 30-32). Stevenson discloses issuing an error message. This error message qualifies as the claimed "alarm".

With regard to claim 8, Stevenson discloses that the optical element is at least one of a diffusion plate and a mirror (col. 3 lines 16-20 in conjunction with Figure 1). The window 12 disclosed in Stevenson qualifies as the claimed "diffusion plate" per the applicant's specification (see pg. 24, inter alia). Obviously, the mirror 14 in Stevenson qualifies as the claimed mirror.

With regard to claim 10, Stevenson discloses adjusting a detection area (col. 5 lines 16-29). Stevenson discloses establishing a set of neighboring pixels around a detected streak, and adjusting the size of the set of pixels based on the size of the streak. This set of neighboring pixels qualifies as the claimed detection area.

With regard to claim 11, Stevenson discloses that the detecting light is visible (col. 4 lines 16-23).

With regard to claim 36, Stevenson discloses irradiating an image-bearing portion of the recording medium simultaneously with reading by scanning the specified detecting light onto the image-bearing portion (col. 3 lines 16-21). Stevenson discloses irradiating an image-bearing part of the recording medium (i.e. the light from the light source irradiates the sheet) by scanning the recording with the detecting light.

With regard to claims 17, 19-22, 24, 26-27, and 37, which merely call for an apparatus for performing the method of claims 1, 3-6, 8, 10-11, and 36, Stevenson discloses such an apparatus as can be seen in Figure 1.

7. Claims 33 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Denber (U.S. Pat. No. 5,214,470).

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With regard to claim 33, Denber discloses a first detecting step of detecting a first optical defect existing on an optical element forming an optical system which reads the image data from the image recording medium (col. 1 lines 51-56).

Denber further discloses a second detecting step of detecting a second optical defect existing on the image recording medium (col. 1 lines 61-64).

With regard to claim 38, Denber discloses irradiating an image-bearing portion of the recording medium simultaneously with reading by scanning the specified detecting light onto the image-bearing portion (col. 2 lines 45-62). Denber discloses irradiating an image-bearing part of the recording medium (i.e. the light from the light source irradiates the sheet) by scanning the recording with the detecting light.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson as applied to claims 1 and 17 above, and further in view of Sugiura et al. (USPN 6,034,766). The arguments as to the relevance of Stevenson as applied above are incorporated herein.

With regard to claim 9, Stevenson fails to expressly disclose that the position of the optical element is changed in accordance with the detection result. Sugiura, however, discloses changing the position of the optical element based on the detection result (Sugiura column 9, lines 44-47: The reference discloses that a slide table unit is used to move the optical member (i.e. optical member) based on data output from the line sensor (i.e. detection result)).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Stevenson by adding the ability to change the position of the optical member based on the detection result as taught in Sugiura et al. because such an ability allows the system to automatically diminish errors in the scanning system caused by scratches or dust particles on the actual optical elements in the system. This will, therefore, reduce false detections and increase the overall effectiveness of the system.

With regard to claim 25, which merely calls for an apparatus for performing the method of claims 9, both Stevenson and Sugiura disclose such an apparatus (as can be seen in Figure 1 of the respective references).

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10. Claims 12 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson as applied to claims 11 and 27 above, and further in view of Denber (USPN 5,214,470). The arguments as to the relevance of Stevenson as applied above are incorporated herein.

With regard to claim 12, Stevenson fails to expressly disclose that the image recording medium is removed from the optical path of the visible light, before the visible light is scanned. Denber, however, discloses removing the image recording medium (i.e. the document) from the platen (i.e. the optical path) before the visible light is scanned. It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Stevenson by initially scanning the platen in the absence of a document as taught by Denber. Such a modification would have allowed for a method which provided information regarding the presence and location of foreign matter and/or scratches on the optical member (Denber col. 1 lines 35-40). This would have made for easy distinguishability between defects which existed on the image and defects which existed on the optical member itself.

With regard to claim 28, which merely calls for an apparatus for performing the method of claim 12, both Stevenson and Denber disclose such an apparatus (as can be seen in Figure 1 of the respective references).

11. Claims 13-14 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson as applied to claims 1 and 17 above, and further in view of LeCouteur (GB 1547811 A). The arguments as to the relevance of Stevenson as applied above are incorporated herein.

With regard to claim 14, which is representative of claim 13, Stevenson discloses detecting at least one of a foreign matter which adheres and a scratch which exists on the recording medium. Stevenson fails to expressly disclose that the detecting light is an invisible light. LeCouteur, however, discloses detecting foreign matter by reading a specified detecting light by scanning an invisible light (LeCouteur pg. 1, left column, lines 34-39). The infrared light disclosed in LeCouteur is an invisible light. It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Stevenson by using invisible light to detect foreign matter as taught by LeCouteur. Such a modification would have allowed for a method in which it was "relatively easy to detect electrically those portions of the signal which indicate the presence of imperfections" (LeCouteur pg. 1, rt. Column, lines 52-58).

With regard to claims 29 and 30, which merely call for an apparatus for performing the method of claims 13 and 14, both Stevenson and LeCouteur disclose such an apparatus (as can be seen in Figure 1 of the respective references).

12. Claims 15-16 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Stevenson and LeCouteur as applied to claim 14 above, and further in view of Sugiura et al. (USPN 6,034,766). The arguments as to the relevance of the aforesaid combination as applied above are incorporated herein.

With regard to claim 15, which is representative of claim 16, the claim calls for changing the focusing position of the detecting light. Such a focusing element is absent from the combination of Stevenson and

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LeCouteur, but is disclosed in Sugiura et al. (see column 9, lines 17-19: The reference describes that the imaging lens can be used to focus with respect to the line sensor.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding the focusing capabilities taught in Sugiura et al. because the ability to focus the image allows for the best and most accurate detection of scratches and foreign matter.

13. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denber as applied to claim 33 above, and further in view of LeCouteur (GB 1547811 A). The arguments as to the relevance of Denber as applied above are incorporated herein.

Claim 34 calls for the use of invisible in the detection of foreign matter. This feature is absent from Denber, but is disclosed in LeCouteur (see pg. 1, left column, lines 34-39: The reference describes using infrared (i.e. invisible) light to detect imperfections in images). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Denber by using invisible light to detect foreign matter as taught by LeCouteur. Such a modification would have allowed for a method in which it was "relatively easy to detect electrically those portions of the signal which indicate the presence of imperfections" (LeCouteur pg. 1, rt. Column, lines 52-58).

14. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denber and LeCouteur as applied to claim 34 above, and further in view of Sugiura et al. (USPN 6,034,766). The arguments as to the relevance of the aforesaid combination as applied above are incorporated herein.

Claim 35 calls for the additional limitation of changing a focusing position between the first and second detecting steps. This feature is absent from the combination of Denber and LeCouteur, but is disclosed in Sugiura (see column 9, lines 17-19: The reference describes that the imaging lens can be used to focus with respect to the line sensor.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding the focusing capabilities taught in Sugiura et al. because the ability to focus the image allows for the best and most accurate detection of scratches and foreign matter.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final

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action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (703) 305-6301. The examiner can normally be reached on 8:30am - 5:00pm M-F.

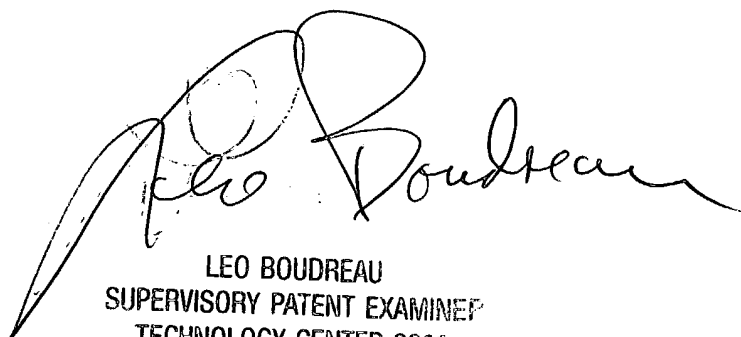
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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